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Multisensory and Active Learning Approaches to Teaching Medieval Art

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Multisensory and Active Learning Approaches to Teaching Medieval Art

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Teaching medieval Western European and Byzantine art can be challenging. Despite many students immersing themselves in the *Game of Thrones*' pseudo-medieval fantasy world, the art and actual history remain a tough sell to most young adults.[1] As specialists in late antique and late Byzantine art, we found it frustrating to have our enthusiasm for the course content that we love met with lack of student interest and subpar student work (in comparison with topics from, say, ancient Egypt or the Italian Renaissance). In this article, we share how we addressed this with resources and teaching strategies focusing on multiple senses—those of audiences from the artworks' original contexts and students' own—in order to animate medieval art and improve student learning. We have taught with this method in courses including: undergraduate general survey and medieval art courses used by students primarily to fulfill an arts distribution requirement; Byzantine art seminars for art history majors and minors; and graduate level classes on more focused topics. Our own approach to this article can be categorized as descriptive research with regards to our instruction, based on our experiences and adaptations in the classroom. The pedagogy is grounded theoretically in scholarship on active and experiential learning and the recent "sensory turn" in art history scholarship, which is transforming our understanding of medieval European art. The success of engaging students with the course material was measured by

[1] For those fans of the show who do have an interest in medieval art and history, in 2014 the Getty Museum featured a blog on the television series' intersections with both fields: http://blogs.getty.edu/iris/tags/game-of-thrones/. For discussions of the heinous phenomenon of white supremacist students being attracted to courses that include medieval culture (something neither of us have encountered to our knowledge): David M. Perry, "What to Do When Nazis are Obsessed with Your Field," *Pacific Standard*, September 6, 2017, https://psmag.com/education/nazis-love-taylor-swift-and-also-the-crusades; and Sarah E. Bond, "Hold My Mead: A Bibliography for Historians Hitting Back at White Supremacy," *History From Below*, September 10, 2017, https://sarahemilybond.com/2017/09/10/hold-my-mead-a-bibliography-for-historians-hitting-back-at-white-supremacy/. Karen Overbey addresses the issue as well as the importance of medievalists' and art historians' expanding their courses' scope beyond Western Europe in "Towards the Ethical Practice of Art History," *Material Collective*, August 31, 2018, http://thematerialcollective.org/towards-the-ethical-practice-of-art-history/.

classroom observation, student written reflections and evaluations of the course, and the quality of final research projects.[2]

There are several possible factors for student disengagement in medieval art.[3] A lack of perceived relevance to their own lives and the absence of individual artists' names might prevent students from making human connections across time and geography.[4] We believe that a significant reason for student disinterest is that the familiar lecture format of teaching medieval art—in isolation on slides, removed from original context and function—focuses only on the visual qualities of artwork that was never intended to be considered apart from its physical environment.[5] A fuller understanding of medieval art, sacred or secular, may be gained through actively exploring aspects of its original sensory context, which also can result in improved student interest and performance as they use their own senses to participate in class activities.

The Sensory Turn and Medieval Art History

The discipline of art history has traditionally focused on the visual impact of objects and monuments, but the recent sensory turn has prompted art historians, architectural historians, and archaeologists to investigate how art objects and monuments engage all five senses, transforming the "period eye" into the broader "period sensorium."[6] The sensory turn began in anthropology, and is based on "the

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[2] We do not have systematic baseline and post-intervention data to analyze, based on differentiations in final assessments and course formats in the classes considered here. For typical data used in art history SoTL, see Marie Gasper-Hulvat, "Active Learning in Art History: A Review of Formal Literature," *Art History Pedagogy & Practice* 2, no. 1 (2017): 20–24, https://academicworks.cuny.edu/ahpp/vol2/iss1/2/.

[3] Difficulties in teaching medieval art met with integrated course design are discussed in Marice Rose and Roben Torosyan, "Integrating Big Questions with Real World Applications: Models from Art History and Philosophy," in *Designing Courses for Significant Learning: Voices of Experience*, ed. L. D. Fink and A. Fink (San Francisco: Jossey-Bass, 2009), 61–71; Susan L. Ward addressed challenges in teaching medieval art history to studio art students in "Teaching Medieval Art History to Art Students," *SMART: Studies in Medieval and Renaissance Teaching* 3, no. 1 (1992): 27–33, http://www.medievalists.net/2008/10/teaching-medieval-art-history-to-art-students/. Ward uses inquiry based learning, giving students a choice of traditional research papers or creation of medieval-inspired objects.

[4] On the importance of the human connection and personal relevance supporting learning, with bibliography on pedagogical research, see Marice Rose, "Object Lesson: Using Family Heirlooms to Engage Students in Art History," *Art Education* 65 (2012): 49–51.

[5] For a literature review of the benefits of active learning, see Gasper-Hulvat, "Active Learning in Art History," 19.

[6] David Howes, "Taking Leave of Our Senses: A Survey of the Senses and Critique of the Textual Revolution in Ethnographic Theory" and "Coming to Our Senses: The Sensual Turn in Anthropological Understanding," in *Sensual Relations: Engaging the Senses in Culture and Social*

premise that the sensorium is a social construction … senses are lived and understood differently in different cultures and historical periods."[7] The sensory turn has allowed art historians—particularly those researching premodern and non-western art—to question the primacy of sight in evaluating works of art.[8] The sensory turn is currently informing and transforming the study of medieval art history, as presented to the wider public in the 2016/2017 exhibition *A Feast for the Senses: Art and Experience in Medieval Europe*, curated by Martina Bagnoli for the Walters Art Museum, in partnership with the Ringling Museum of Art.[9] Recent research on medieval art considers investigations of sound in spaces such as mosques, churches, and bathhouses; the role of scent in domestic and sacred architecture; the evocation of taste in objects associated with dining and banqueting; and the changing moral and scientific discourses surrounding the senses (see Appendix).

In our classes we assigned selected readings, most of which are essentially case studies—art historians exploring objects or groups of objects from a sensory perspective—in order to incorporate the content into discussion. Some of the readings that aided student learning best have been those that examined a single object or series of objects from the perspective of all five senses. In Hedrick's and Rose's courses, these articles were intended to lay the foundation for the class and serve as models for how art historians—including the students!—could use

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Theory (Ann Arbor: University of Michigan Press, 2003), 3–58; David Howes, "Charting the Sensorial Revolution," *Senses and Society* 1, no. 1 (2006): 113–128; and Anthony Synnott, "Puzzling Over the Senses: From Plato to Marx," in *The Varieties of Sensory Experience: A Sourcebook in the Anthropology of the Senses*, ed. David Howes (Toronto: University of Toronto Press, 1991), 61–76. For senses in medieval Europe, see Florence Bouchet and Anne-Hélène Klinger-Dollé, eds., *Penser les cinq sens au Moyen Âge: poétique, esthétique, éthique* (Paris: Classiques Garnier, 2015); Annette Kern-Stähler, Beatrix Busse, and Wietse de Boer, eds. *The Five Senses in Medieval and Early Modern England* (Leiden: Brill, 2016); Richard G. Newhauser, ed., *A Cultural History of the Senses in the Middle Ages* (London: Bloomsbury Publishing, 2016); Stephen G. Nichols, Andreas Kablitz and Alison Calhoun, eds., *Rethinking the Medieval Senses: Heritage, Fascinations, Frames* (Baltimore: Johns Hopkins University Press, 2008); Eric Palazzo, ed., *Les cinq sens au Moyen Âge* (Paris: Editions du Cerf, 2016); Simon C. Thomson and Michael D.J. Bintley, eds. *Sensory Perception in the Medieval West* (Turnhout: Brepols, 2016); and Christopher Michael Woolgar, *The Senses in Late Medieval England* (New Haven: Yale University Press, 2006).

[7] Howes, "Charting the Sensorial Revolution," 113.

[8] Jenni Lauwrens, "Welcome to the Revolution: The Sensory Turn and Art History," *Journal of Art Historiography* 7 (2012): 1–17. In 2015 the conference "The Senses and Visual Culture from Antiquity to the Renaissance" took place at the University of Bristol: https://sensesandvisualculture.wordpress.com/.

[9] *A Feast for the Senses: Art and Experience in Medieval Europe*, Walters Art Museum, Baltimore, Maryland, October 16, 2016–January 8, 2017 and Ringling Museum of Art, Sarasota, Florida, February 4–April 30, 2017; Martina Bagnoli, ed. *A Feast for the Senses: Art and Experience in Medieval Europe* (New Haven: Yale University Press, 2016).

multisensory perspectives to more fully engage with premodern works of art. The students returned to the approaches and ideas raised in these articles throughout the semester, weeks after the readings had initially been assigned.

One article, written by renowned art historian Bissera Pentcheva, herself a leading figure in art history's sensory turn, served as a foundational text for Hedrick's seminar students. Assigned at the beginning of the semester, the article helped model the examination of an object through a multisensory lens. According to Pentcheva, art historians have ignored the ways that engagement with a Byzantine icon was a multisensory, rather than purely visual, experience.[10] While art historians have focused on issues of iconography and style, she notes that Byzantine multi-media icons deliberately engaged the whole sensorium, from touch to taste through its own materiality and its role in the multisensory world of the Byzantine church service. For Pentcheva, icons "appeal to the sense of touch through the textured surface of the repoussé and enameled-filigree metal revetments."[11] At the same time, the changing conditions around an icon cause the object itself to seem alive and animated—"a person's approach, movement, and breath disrupt the lights of the candles and oil lamps, making them flicker and oscillate on the surface of the icon. This glimmer of reflected rays is enhanced by the rising incense in the air, the sense of touch and taste, and the sound of prayer to animate the planel."[12] These shifting sensations make the icon "appear alive."[13] For Pentcheva, this multisensory character is fundamental to the icon's ability to enact the presence of Christ or a saint.

Heather Hunter Crawley likewise advocates for an approach to Byzantine *ars sacra* that privileges the sensorial and embodied experience of the objects during worship rather than questions of iconography and aesthetics.[14] Crawley's article discussed various objects used in Byzantine church services, and the way each object deliberately exploited sensory engagement—from incense burners producing scent to liturgical fans creating sound—to facilitate a divine encounter. For Crawley, some of the most potent religious encounters occurred through objects

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[10] Bissera V. Pentcheva, "The Performative Icon," *Art Bulletin* 88, no. 4 (2006): 631–655. See also her book *The Sensual Icon: Space Ritual and The Senses in Byzantium* (University Park, PA: Penn State University Press, 2010); and for her *Icons of Sound* research, with Jonathan Abel, on how Hagia Sophia's acoustics, visual environment, and Byzantine chant worked together to enhance spiritual experience, see *Hagia Sophia: Sound, Space and Spirit in Byzantium* (University Park, PA: Penn State University Press, 2017).

[11] Pentcheva, "The Performative Icon," 631.

[12] Pentcheva, "The Performative Icon," 631.

[13] Pentcheva, "The Performative Icon," 632.

[14] Heather Hunter Crawley, "Embodying the Divine: Experience of the Sixth-Century Eucharist," in *Making Senses of the Past: Towards a Sensory Archaeology*, ed. Jo Day (Carbondale, IL: Southern Illinois University Press, 2013), 160–176.

that engage multiple senses. For instance, early Christian patens—the plates used to hold and distribute eucharistic bread—were typically decorated with a cross or chi-rho. Crawley notes that the crosses inscribed on the patens would only gradually become visible during the ritual, and that the light glinting off the objects would slowly come to be understood as radiating outward from the cross itself. For the congregant, this would have been an epiphanic moment, one of many in the Divine Liturgy, augmented by the haptic experience of touching the elevated cross. Both would occur directly before the communicant ate the eucharistic bread, activating the sense of taste. For Crawley, Christian ritual objects were not fundamentally intended to *teach* worshippers about God, but allow worshippers to *encounter* God.

Students also responded enthusiastically to readings that examined an object or object group by focusing on one specific sense. In particular, the students were deeply influenced by those articles that complicated premodern notions of vision, considering it as part of the broader sensorium rather than as something entirely rational, cerebral, and divorced from bodily experience. Several readings dealt with the ways in which sight and touch were understood to be linked in late antiquity and the Middle Ages. Two important premodern models of sight, extramission and intromission, posit the direct contact between the viewer's body and the object of vision.[15] In extramission, a ray of vision leaves the body, travels to the object of vision, and then returns to the eye. In intromission, the ray leaves the visible object and travels to the eye. In both models, sight was itself understood as a kind of physical contact. Because of this, authors like Georgia Frank emphasize that for the premodern viewer—in her case, the late antique pilgrim—vision was not passive, but rather an active force.[16] Frank notes in her study that the earliest Christian pilgrimage accounts emphasize sight and vision, while in subsequent centuries sight is seemingly replaced by touch as the dominant sense.[17] For Frank, though, the shift is not as seismic as it may initially appear. Because of the theories of extramission and intromission, sight and touch "were not exclusive, but rather convergent senses … sight was not replaced by touch, it had always been a form of touch."[18] For Frank, then, the viewer and object of vision were understood to be fundamentally linked through the act of viewing.

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[15] Robert Nelson, "Descartes's Cow and Other Domestications of the Visual," in *Visuality Before and Beyond the Renaissance*, ed. Robert S. Nelson (Cambridge: Cambridge University Press, 2000), 4–5.

[16] Georgia Frank, "The Pilgrim's Gaze in the Age before Icons," in *Visuality Before and Beyond the Renaissance*, ed. Robert S. Nelson (Cambridge: Cambridge University Press, 2000), 98–115.

[17] Frank, "The Pilgrim's Gaze," 105.

[18] Frank, "The Pilgrim's Gaze," 109.

A favorite article—and one cited in nearly half of Hedrick's students' seminar papers—was Michael Camille's "Before the Gaze."[19] In the article, Camille argues for a fundamental shift in the understanding of vision that occurred during the late Middle Ages. Camille argued that as extramission gave way to intromission, the role of the object changed. For Camille, "the intromission model placed emphasis not upon the viewer, previously the beaconlike source of vision, but upon the image as the base of the visual pyramid, literally reversing the flow of the visual rays from subject to object …"[20] According to Camille, the change impacted both making and response, sparking the proliferation of a "range of powerful religious images."[21] This shifting understanding of vision also resulted in the medieval image having even greater power than they had previously, as "the intromission model took the emphasis away from vision and onto the power of images themselves, whose eyes, as in cult statues and devotional images, could stare back."[22] Articles such as Camille's helped the students consider premodern artworks and objects as powerful forces with their own agency, not merely passive examples of style or iconography.

Perhaps the most vigorous debate in Hedrick's class was prompted by an anthropological study.[23] In *The Sensory Experience of Blood Sacrifice in the Roman Imperial Cult*, Constance Weddle attended modern Islamic Kurban Bayram sacrifices outside Istanbul in order to "make suggestions" about the sensory experience of attending a Roman imperial cult sacrifice. Weddle hoped to gain basic insight into questions otherwise unexplored and unanswered in both ancient accounts and modern scholarship—"how far sounds and smells carried, how they might have affected daily life, whether or how they might have played a role in reactions and responses to particular cults."[24] Although Weddle emphasized that she was not at Kurban Bayram sacrifices in order to "analyze socio-religious practices," some students found the exercise flawed and even offensive, objecting to Weddle's assumption that she will have the same sensory experience as worshipers—she notes that she comes from the "Western (Christian) tradition."[25] Others took issue not with Weddle's socio-religious background but with her

[19] Michael Camille, "Before the Gaze: The Internal Senses and Late Medieval Practices of Seeing," in *Visuality Before and Beyond the Renaissance: Seeing as Others Saw*, ed. Robert Nelson (Chicago: University of Chicago Press, 2000), 197–223.

[20] Camille, "Before the Gaze," 207.

[21] Camille, "Before the Gaze," 207.

[22] Camille, "Before the Gaze," 207.

[23] Candace Weddle, "The Sensory Experience of Blood Sacrifice in the Roman Imperial Cult," in *Making Senses of the Past: Towards a Sensory Archaeology*, ed. Jo Day (Carbondale, IL: Southern Illinois University Press, 2013), 137–159.

[24] Weddle, "The Sensory Experience," 138.

[25] Weddle, "The Sensory Experience," 142.

modernity. How, they asked, could one conflate Kurban Bayram with Roman imperial sacrifice, even if they both involved the sacrifice of cows and bulls? These reservations centered on the central tenet of sensory studies that sensory experience is culturally as much as physically conditioned. Because Widdle was neither a practicing Muslim nor an ancient Roman, students questioned the extent to which her sensory experience could be understood as reflecting the sensory experiences of worshipers, noting that the "autoethnographic" approach might not be appropriate for this research. Other students, however, still found the study compelling. For them, the experiment was worth undertaking even though it could and would not be entirely successful. Students were particularly interested in some of Weddle's specific observations vis-à-vis material culture. For instance, students found claims that the smell of blood may have lingered on porous marble altars "long after the completion of the slaughter"[26] compelling, and then raised further questions about the staining of material by blood and by-products of the sacrifice. How would such physical traces of the sacrifice have been understood by priests or worshippers? Would porousness have affected the choice of material by artists and artisans? Can we ask similar questions of ritual objects from other time periods? From a pedagogical perspective, the reading was one of the most effective of the semester in raising potent methodological and art historical questions.

Each article was meant to spur vigorous student engagement, providing fertile ground for both historical and theoretical conversations. Addressing topics in class discussion is an important component of Hedrick and Rose's courses, and the most common active learning technique in art history SoTL literature.[27] For example, Laetitia LaFollette argues for the efficacy of small group discussion within large classes in her article on technology and team-based learning.[28] Gretchen Bender discusses her revising the art history survey to focus on "slow teaching" in order "to engage in a conversation with the stuff that human beings take time to craft and conceptualize."[29] A key word for Bender is *conversation* as opposed to *discussion*, which has a connotation of being instructor-led. She recommends collaborative assignments to encourage students to respond to one another, helping meet her goal of fostering openness to new ideas and

[26] Weddle, "The Sensory Experience," 154.

[27] Gasper-Hulvat, "Active Learning in Art History," 9.

[28] She also has students create, in this case a virtual Greek temple. Laetitia La Follette, "Blending New Learning Technologies into the Traditional Art History Lecture Course," in *Teaching Art History with New Technologies: Reflections and Case Studies,* ed. Kelly Donahue-Wallace, Laetitia La Follette, and Andrea Pappas (Newcastle: Cambridge Scholars Publishing, 2008), 53–55.

[29] Gretchen Holtzapple Bender, "Why World Art is Urgent Now: Rethinking the Introductory Survey in a Seminar Format," *Art History Pedagogy & Practice* 2, no. 2 (2017): 12–13, https://academicworks.cuny.edu/ahpp/vol2/iss2/2.

perspectives—with regard to art and classmates. In our courses, like Bender, students led discussion of readings while incorporating new material, which helps foster a classroom environment of collaborative learning. It is rewarding when the students stop looking to the faculty member for affirmation or feedback, and fully engage with each other and their thoughts on the topic.

The Sensory Turn and Museums

The sensory turn is rare in art history SoTL literature, but has become common in recent museum studies scholarship and practice, where the role of affect in relation to objects on display and to visitors' bodies within museum exhibitions is a major component.[30] David Howes deems the trend a "rising tide of sensory experimentation in contemporary curatorial practice."[31] History museums have pioneered the use of multisensory experiences to enhance the display of objects within exhibition spaces. Goals for these experiences may resonate with university art history instructors; they include sparking critical reflections on the past's relationship to the present by increasing visitors' engagement with the objects, and connecting visitors with others' lives through the objects, leading to engagement with others' subjective understandings while considering "how these latter were shaped by socio-historical contexts."[32]

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[30] Jari Martikainen addresses it in his discussions of his hands-on approach to teaching art history to art students in "Making Pictures as a Method of Teaching Art History," *International Journal of Education & the Arts* 18, no. 19 (2017) and "Making Pictures, Writing about Pictures, Discussing Pictures and Lecture-Discussion as Teaching Methods in Art History," *Art History Pedagogy & Practice* 2, no. 1 (2017), http://academicworks.cuny.edu/ahpp/vol2/iss1/4. For museum studies, see Andrea Witcomb, "Understanding the Role of Affect in Producing a Critical Pedagogy for History Museums," *Museum Management and Curatorship* 28, no. 3 (2103): 255–271; Nina Levent and Alvaro Pascual-Leone, eds., *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory, and Taste* (Lanham, MD: Rowman and Littlefield, 2014); Dianne Mulcahy, "'Sticky' Learning: Assembling Bodies, Objects and Affects at the Museum and Beyond," in *Learning Bodies*, ed. Julia Coffey, Shelley Budgeon, and Helen Cahill (New York: Springer, 2016), 207–222; Sandra Dudley, ed., *Museum Materialities: Objects, Engagements, Interpretations* (New York: Routledge, 2013); Elizabeth Wood and Kiersten F. Latham, *The Objects of Experience: Transforming Visitor-Object Encounters in Museums* (Walnut Creek, CA: Left Coast Press, 2013); and David Howes, ed., "Sensory Museology," special issue, *The Senses and Society* 9, no. 3 (2014).

[31] Howes, "Introduction to Sensory Museology," in "Sensory Museology," 259, and refer to his bibliography for museums using touch.

[32] Witcomb, "Understanding the Role;" and Kirsten Wehner and Martha Sear, "Engaging the Material World: Object Knowledge and Australian Journeys," in *Museum Materialities*, ed. Sandra Dudley, 143. See also Mulcahy, "'Sticky Learning'," and Dudley, "Introduction," in *Museum Materialities*, ed. Sandra Dudley, 1–17.

Sound is one of the most common senses added to visual components to achieve these goals. At the Minnesota History Center, for example, visitors hear a tornado siren before entering a space designed to recall a mid-twentieth-century basement, including authentic artifacts. It is part of an exhibition on the relationship of Minnesota weather to local culture that aims to stimulate the "human experiences and emotions" of a devastating series of tornadoes that touched down in 1965.[33] Sonic and visual effects of the storms include howling wind and hail pelting against the windows through which a greenish light glows. Archival television footage plays on the basement's television when the simulated storms end and the basement's electricity is "restored."[34] Heightening historical and national consciousness through sight and sound is an intent of the Churchill Museum in London, where, upon approach to the museum from the surrounding Cabinet War Rooms, visitors hear footsteps and doors shutting. Within the museum, recordings of Churchill's voice delivering speeches play when visitors stand in front of photographs related to the content of the speech.[35]

Examples of the use of touch are not uncommon in history museum contexts, including the McCord Museum of Canadian History in Montreal, which featured "handling session" workshops where Inuit elders shared their culture with visitors through conversation and physical engagement with objects.[36] The National Museum of Australia also includes a tactile component, with visitors using their fingers to trace stitching on a replica embroidered map, and to hold love tokens made by convicts. Beyond sight and touch, this museum incorporates the sense of smell in augmenting the display of fishermen's cauldrons with the scent of dried sea cucumber.[37] Smell is used to great effect in the National Archaeological Museum of Athens's *Countless Aspects of Beauty* current exhibition (through May

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[33] "About the Exhibit," Minnesota Historical Society, accessed July 24, 2018, http://www.mnhs.org/exhibits/weather/exhibit.php.

[34] The *Weather Permitting: Get to the Basement!* exhibition is discussed by Wood and Latham, *The Object of Experience*, 156–8.

[35] Sheila Watson, "Myth, Memory and the Senses in the Churchill Museum," in *Museum Materialities*, ed. Sandra Dudley, 211.

[36] Marie-Pierre Gadoua, "Making Sense through Touch: Handling Collections with Inuit Elders at the McCord Museum," *The Senses and Society* 9, no. 3 (2014): 323–341. Historically, museums have incorporated touch for visually impaired visitors. For examples of these and other museums using touch, see Nina Levent and D. Lynn McRainey, "Touch and Narrative in Art and History Museums," in *The Multisensory Museum*, eds. Nina Levent and Alvaro Pascual-Leone, 61–84.

[37] Kirsten Wehner and Martha Sear, "Engaging the Material World," 159. There are perfume and food/drink museums that emphasize scent and a number of natural history and history museums that use scent in exhibitions where it is effective in conveying to visitors a sense that they are present in a different place and/or time. Richard J. Stevenson, "The Forgotten Sense: Using Olfaction in a Museum Context: A Neuroscience Perspective," in *The Multisensory Museum*, eds. Nina Levent and Alvaro Pascual-Leone, 151–165.

2019), which presents ancient Greek concepts of beauty and aesthetics, including scented oils which were used by women and men not only for personal adornment but also as a cultural signifier and to mark social milestones such as birth and marriage. The museum commissioned a cosmetics company to recreate—with authentic ingredients and ancient methods—three different perfumes for visitors to smell.[38]

Art museums less frequently appeal to senses other than sight, but instances of their exploring the nonvisual are becoming more frequent. In 2016/2017, the Detroit Institute of Arts presented *Bitter|Sweet: Coffee, Tea & Chocolate*, billed as "the first exhibition at the D.I.A. to engage all five senses."[39] Accompanying the display of coffee- and tea-related implements and artwork from the early modern era through the nineteenth century were the smell of coffee beans roasting, the sounds of Bach's "Coffee" Cantata, and the opportunity to touch cocoa pods and taste drinking chocolate made from Aztec and French recipes. Especially relevant for this article, the *Feast for the Senses* museum exhibition taught its visitors the sensory contexts of medieval European sacred and elite material culture by playing recordings of church bells, music, and ambient garden sounds in the galleries where medieval objects were displayed, and invited visitors to handle rosary beads in front of devotional paintings and to smell incense, perfume, and flowers that were depicted in tapestries.[40] Not only was the sensorium addressed in the exhibition's content, the display used multisensory means to convey it.

Object-Based Experiential Activities

Classrooms can also become effective places to encourage learning through activities where multiple senses are engaged. This section will discuss specific active learning experiences outside and within the classroom, and their pedagogical rationales. Rose teaches undergraduate students at a Jesuit university of 4,100 undergraduate and 1,000 graduate students in suburban southern New England, and is fortunate to be near easily accessible museum and religious resources. Most students are white, middle class, 18–21 years old, and from the northeastern United

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38 Helena Smith, "Scents of Antiquity Revived for Exhibition at Athens Museum," *The Guardian*, May 30, 2018, https://www.theguardian.com/world/2018/may/30/scents-of-antiquity-revived-for-exhibition-at-athens-museum; Catalogue: Οι αμέτρητες όψεις του Ωραίου (Athens: National Archaeological Museum, 2018).

39 "*Bitter|Sweet: Coffee, Tea & Chocolate,"* Detroit Institute of Art, accessed July 21, 2018, https://www.dia.org/art/exhibitions/bittersweet-coffee-tea-chocolate.

40 Martina Bagnoli, ed., *A Feast for the Senses: Art and Experience in Medieval Europe* (Baltimore: The Walters Art Museum, 2016), exhibition catalog; for elements of the visitor experience, see Jennifer P. Kingsley, review of the exhibition and catalogue, *CAA.Reviews*, December 22, 2017, http://dx.doi.org/10.3202/caa.reviews.2017.203.

States. The university offers a BA in Art History & Visual Culture. The majority of students who take art history are fulfilling a core distribution requirement. Hedrick taught both undergraduate and graduate students at a public university in upstate New York. While located further from accessible museum resources, the university sponsored multiple trips per year to medieval art collections in New York City. Scholarships were available to offset costs for any students not able to pay the trip fee, which was less than $40. The university averages around 13,000 undergraduate and 3,000 graduate students. The majority of students are white and 18–21 years old. The university offers a BA, MA, and PhD in Art History.

Research shows that active learning through multiple senses can help students remember and understand material.[41] There is a body of art history SoTL literature that demonstrates examples and benefits, as analyzed by Marie Gasper-Hulvat in 2017 in a welcome comprehensive overview and analysis. In addition to often using multiple senses, active learning is differentiated from passive by the use of student-led activities that incorporate higher-order thinking and metacognition.[42] One does not have to completely redesign one's course to incorporate these suggestions; courses that are predominantly lecture format can still include active learning modules. The learning activities described in the following section also meet the definition of experiential learning.[43] "Experiential learning ... has been identified and endorsed throughout history and remains the strongest and most enduring of the learning theories."[44] The experiential learning model was first codified as such by David Kolb and Roger Fry in 1974.[45] Kolb and Fry stress the importance of kinesthetic qualities of learning in addition to visual and auditory, the combination of which they argue results in better internalization of knowledge.

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[41] Pawell J. Matusz, Murray Wallace, and Micah M. Murray, "A Multisensory Perspective on Object Memory," *Neuropsychologia* 105 (2017): 243–252; Nina Levent and Alvaro Pascual-Leon, "Introduction," and Jamie Ward, "Multisensory Memories: How Richer Experiences Facilitate Remembering," in *The Multisensory Museum*, eds. Nina Levent and Alvaro Pascual-Leone, xii–xxvi, 273–284. The effectiveness of teaching children using a multisensory method is well known, for example in the Montessori and Emiglia Romana models, as well as the Orton Gillingham approach to literacy. Childhood education is beyond the scope of this article, but see Tracy Thomson's dissertation for a useful review: "Sensory-Based Arts Education and Engagement in the Junior Classroom: Exploring Multiple Ways of Knowing and Meaning" (PhD diss., University of Western Ontario, 2015), Electronic Thesis and Dissertation Repository, Paper 3286.

[42] Marie Gasper-Hulvat, "Active Learning in Art History," 19.

[43] Active learning is used as a subcategory of experiential learning in Scott D. Wurdinger and Julie Carlson, *Teaching for Experiential Learning* (Lanham, MD: R & L Education, 2009), although others present experiential learning as subcategory of active learning.

[44] Colin Beard and John P. Wilson, eds., *Experiential Learning* (London: Kogan Page, 2006), 44, with review of the literature from John Dewey to Paolo Friere, 19–41.

[45] David A. Kolb and Roger E. Fry, *Toward an Applied Theory of Experiential Learning* (Cambridge, MA: MIT Alfred P. Sloan School of Management, 1974).

An effective way for students to gain a fuller picture of medieval art and life is to leave the classroom to engage with authentic objects and spaces, a form of experiential, object-based learning that is standard practice in most art history classes.[46] In order to qualify as experiential learning, students should not just listen to a tour in a museum or other location, but engage with the material through active discussion, on-site activities, and reflection afterward.[47] Rose, in 2009, discussed how visits to local churches (today we would add synagogues and mosques) can be effective ways for students to strengthen foundational knowledge of typical plans, elevations, furnishings, and decoration of medieval sacred buildings, while physically experiencing the spatial impact of features like domes and transepts.[48] In addition to the visual, participants absorb the sounds and smells that imbue the spaces. When students arrived at the local Greek Orthodox church for a visit, a Byzantine chant recording was playing through speakers in the narthex, and the smell of incense permeated the space. This olfactory, auditory, and visual experience of the architecture plus icons, liturgical implements, and wall paintings made the readings and discussions more immediate and easier to understand. If an off-campus class trip is not feasible, religious spaces on campus can also be used. During one class meeting, Rose's students met at the campus chapel, compared its plan and placement of the altar to those of medieval churches, and discussed how a reliquary affixed to a wall differed from medieval examples that we studied. They applied readings on relics, reliquaries, and pilgrimage to compare and contrast elements.

Like architecture, illuminated manuscripts are difficult to teach from projected images. When displayed on a classroom screen, there is little sense of the manuscripts' materiality, including scale and texture of page and pigment. Manuscript illuminations were not meant to be seen in isolation, they are parts of a page and a book, with a physical relationship to the text and other images. Teaching this art form benefits from active and experiential learning techniques that engage senses. It is worth investigating if your university special collections/archive or local library has manuscripts—even if they are not medieval—or old illustrated books. With physical examples, students can see relationships between text and image, as well as physical features such as the thickness of parchment or cotton rag compared to modern paper. One student wrote in a reflection, "I was shocked by the feel of the paper and how it felt so different and stronger compared to the paper used and printed on today." Rose's university has a facsimile of the Book of Kells

[46] For scholarship on field trips in college level art history courses, see Gasper-Hulvat, "Active Learning in Art History," 6–7.

[47] For example, see Pierroux Palmyre, Ingeborg Krange, and Idunn Sem, "Bridging Contexts and Interpretations: Mobile Blogging on Art Museum Field Trips," *MedieKultur: Journal of Media and Communication Research* 27, no. 50 (2011): 30–47.

[48] Rose and Torosyan, "Integrating Big Questions," 67.

and an edition of the contemporary illuminated St. John's Bible, which students were allowed to touch with clean hands or gloves. A local public library that has a Special Collection also allowed students to see, touch, and smell old books. An early modern printed cookbook, although not art historical, resonated with students because of its physical qualities, especially the food stains and wear on the spine and cover from repeatedly being grasped by a cook. During the visit students reviewed terms related to manuscript production while seeing evidence of their use, and compared the books to manuscripts that students had read about. Students also noticed the marginal notations in various books, made by readers over time. As a student remarked in a reflection, "The library visit humanized the people of the past and made physical the lessons we learned in class." Another wrote: "For me, the best part was being able to try and read and hold the texts. There is a better connection to what you are looking at if you are able to use more than just your eyes. I felt as if I was going back in time to when and where the book was made and experiencing its journey … Overall, my time at the library was very fun and taught me something I feel I would not have learned if I had never taken this course. Any time I feel as if I learned something interesting or fascinating about a certain topic, it sticks with me for a really long time, and I am going to remember this trip for all it had to show me."

Rose and Hedrick also include art-making activities that relate to course content in order to engage students in tactile and spatial qualities of medieval art and architecture while creating their own versions. These are effective means of multisensory, experiential learning that allow students to process information in a different way than listening, viewing, and taking notes.[49] Although experiencing the Greek Orthodox church and campus chapel helped students conceptualize the medieval spaces described in readings and seen in class lectures, Rose found it a

[49] Susan Ward and Jari Martikainen give art-making examples that have been successful in their classrooms, and link them to increased student motivation to learn as well as meeting course learning goals, see Ward, "Making Pictures as a Method" and Martikainen, "Making Pictures, Writing about Pictures." See also the chapter on art-making assignments for high school art history students in Michael J. McCarthy, *Introducing Art History: A Guide for Teachers* (Toronto: Ontario Institute for Studies in Education, 1978). More examples can be found in the *Art History Teaching Resources* blog, such as: Corey Dzenko, "Walking on the Grass: Using Campus as Source Material," March 27, 2017, http://arthistoryteachingresources.org/2017/03/walking-on-the-grass-using-campus-as-source-material/ ; Jennifer Feltman, "Understanding Geometry and Cathedral Design Through Experiential Learning," October 11, 2017, http://arthistoryteachingresources.org/2017/10/understanding-geometry-and-cathedral-design-through-experiential-learning/; Sherry Freyermuth, "Hands on History: Learning the History of Typography with a Letterpress Workshop," May 1, 2017, http://arthistoryteachingresources.org/2017/05/hands-on-history-learning-the-history-of-typography-with-a-letterpress-workshop/; and Tiffany Alvarez-Thurman, "Hands-on Learning in AP Art History," April 7, 2017, http://arthistoryteachingresources.org/2017/04/hands-on-learning-in-ap-art-history/.

challenge to teach the authentic Byzantine cross-in-square plan (a common plan of middle Byzantine churches) and its associated decorative program from two-dimensional sources, since available published or online images usually show just one or two views. The typical Romanesque pilgrimage church plans and elevation provided similar difficulties. 360° videos are helpful, but are still passive experiences since one is not surrounded by the space; virtual reality goggles may solve this problem when they become affordable technology for an entire class.[50] In order to comprehend the spatial relationships between the medieval architecture and its monumental paintings and mosaics, students in groups built cross-in-square and pilgrimage churches using simple supplies: shoeboxes, cardstock, and plastic bowls. By dividing the shoebox into appropriate parts such as narthex, nave, choir, and adding features such as apsidioles made of curved pieces of cardstock, cylindrical cardstock columns which supported bowl domes or cardstock barrel vaults, and decorated tympana over the portals (for the Romanesque versions), they saw how one would move through the church and where the spaces and their imagery would be in relation to the congregation and the whole building. The project does not have to be sacred buildings—one semester students also built typical Norman castles. Rose kept one of the models to refer to when teaching in-situ mosaics or paintings throughout the rest of the semester.

Art-making projects also engage students in how artists produced manuscripts while they tap into their own creativity. Videos produced by the Getty Museum and the St. John's Seminary on medieval manuscript production show the manufacture process, from stretching parchment to making ink and writing calligraphy, and are useful for introducing the medium.[51] In one project, students copied a Hiberno-Saxon interlace pattern from a book that reproduces interlace motifs from medieval artworks and shows step-by-step how to achieve the patterns.[52] Following the diagrams, first on a sheet of graph paper (monks would have made their own framework with pinpricks), they marked the points around which the interlace weaves, and then they drew the pattern in stages. Reflection is key for experiential learning, and students' reflective writings showed that they made connections between the activities and their learning.[53] Most students reported orally and in written reflections that they found this required more

[50] For example, Media Center for Art History, "Life of a Cathedral: Notre Dame of Amiens," 2017, Columbia University, http://projects.mcah.columbia.edu/amiens-arthum/map/panorama-tour, and the panoramas on http://panoramy.zbooy.pl/360/. We have not yet experimented with Google Cardboard, but this is a lower cost option of experiencing virtual reality.

[51] Getty Museum, "Making Manuscripts," June 17, 2014, accessed March 13, 2017, https://youtu.be/nuNfdHNTv9o; and "The Saint John's Bible," January 8, 2008, accessed March 13, 2017 https://youtu.be/BK9oCX5lBLQ.

[52] Aidan Meehan, *Celtic Design: Knotwork* (London: Thames and Hudson, 1991).

[53] Beard and Wilson, *Experiential Learning*, 20.

concentration than expected, which reinforced art historical scholarship that the drawing of these patterns may have aided in prayer or been a type of meditation. In the most recent set of reflections, many students mentioned that the artists must have had great patience and ability to focus, an aspect of the material that was not discussed in class and would not have been a point made in readings. One semester, students were so absorbed in the activity that nobody noticed that the clock showed class had ended.

Another art-making assignment aimed to help students engage more deeply with icons. Martikainen argues that creating art promotes not only art history factual knowledge, but also visual literacy and personal connections to the material.[54] Students began by picking a saint (medieval or modern, real or imagined, secular or sacred) and then wrote a brief "vita." When describing their saint's life, students were asked to refer to primary sources they had read in class and emulate the strategies and tropes typical of medieval authors. Students described the saint's background, what miracles they had done to deserve sainthood, etc. Once students had settled on a saint—saints ranged from Buffy the Vampire Slayer to a student's deceased grandmother to Barack Obama—and written a short version of his/her life, they then designed and created their own vita icon. Drawing inspiration from icons they had studied in class, students began by picking a base material (many used painted canvas to mimic ivory or brown construction paper to mimic wooden panels) and then moved on to choosing scenes from their saint's life to depict. Some students simply drew or painted their vita icon, but a few made multimedia objects, attaching small sculptures and other materials to a canvas or wooden backing. Several others also made mosaic icons. As the final part of the assignment, students were asked to write an "artist's statement" that placed the icon in an imagined multisensory environment—students detailed the intended audience of their icon, how it was used, and where it would have been displayed. The assignment was an incredible success—students deepened their understanding of medieval hagiographical practices, more fully engaged with icons they identified as a prototype or precedent for one of their own making, and thought about the whole range of meanings afforded by icons through both iconography and symbolism and also materiality and use.

A similar assignment for a class on medieval court culture asked students to design a medieval luxury object. Just as students chose their own saint for the icon assignment, this assignment asked students to choose one of the courts they studied as a class—from the Theodosians of late antiquity to the courts of French Burgundy—and design an object for that setting. Students submitted a written piece outlining their chosen culture, positioning themselves as a particular patron,

[54] Martikainen, "Making Pictures, Writing about Pictures," 13–18 for positive student feedback from written reflections.

identifying users/viewers, and detailing the specific political situation in which an object was intended to be used. From there, they were given free rein to make any type of object. The range of objects was astounding—one student built a cardboard model of an imagined Carolingian palace, one used her high school graduation robes to create late Byzantine coronation regalia, and another carved a bar of soap to resemble the ivory boxes used in Umayyad Spain. The luxury object assignment helped students delve more deeply into a particular medieval political environment and consider the ways that rulers manipulated material culture to establish and maintain their own power. As with the icons assignment, the finished projects represented a profound depth of engagement with course material and fulfilled the foundational knowledge learning goals for these classes of objects.

Resources for historically accurate art-making are Renaissance Faire artisans or other reenactors such as members of the Society for Creative Anachronism; these artists are often enthusiastic about sharing their knowledge and skills of their crafts. A local leatherworker who uses only medieval techniques to make armguards and drinking horn holders (among other products) brought his tools and materials to class and allowed students to use the implements as he taught them how to tool leather. He also brought samples of chain mail made by a contemporary jeweler. Student curiosity made the question and answer period lively, and it ranged beyond leather and armor; for example, he had knowledge of possible methods for medieval tattooing that the professor lacked. Since much medieval secular art, including dress, does not survive, it was a tangible way to bring this content into the course. The work, time, and patience necessary to use premodern technology were made concrete as students used their minds and bodies to create a pattern on the piece of leather, while learning factual material about medieval visual culture.

Colin Beard and John Wilson explain experiential learning as involving the "'whole person' through thoughts, feelings and physical activity," with learning defined as "insight gained through the conscious or unconscious internalization of our own or observed experiences, which builds upon our past experiences or knowledge."[55] Our sensory teaching approach aims to engage the whole student while providing opportunities for them to make links to the experiences and creative achievements of humans in the Middle Ages.

Outcomes

Much of our evidence is qualitative in terms of increased student engagement and learning. We found that the activities, readings, and discussions on multisensory aspects of medieval art changed many of the students' impression

[55] Beard and Wilson, *Experiential Learning*, 43.

of medieval art in general, providing a more vibrant picture of both medieval art and medieval art history than the students were expecting. Several students—particularly those without much exposure to premodern art—had expected medieval art history to be less theoretically rigorous than other art historical disciplines, focusing almost exclusively on iconography and style. Course materials challenged this view. In the opening weeks of Hedrick's class, students were particularly taken by Heather Hunter-Crawley's assertion that premodern material culture—in this case, early Byzantine liturgical objects—was meant to facilitate an experience rather than teach a didactic lesson. For students thinking about medieval art, this basic call to interrogate what an object "does" and "facilitates" rather than as a text whose meaning could be "read" was transformative. Object-based experiential activities also helped inspire this same revelation. As one student reflected after Rose's class visit to the library Special Collection,

> "I liked to hear about the aspects of these books that make them books and objects that were, at one point, used by a person day after day. I thought it was interesting to see the knots that were made at the end of pages so that monks could easily find a particularly passage, the side notes written in the margins and blocks of notes that were cut out, and the splotches of oil left on the pages of the cookbook. All of these characteristics amplified the human quality of a book ... Things like bookmarks, margin notes, and food marks are all imperfections that I can relate to in my own experiences with books, textbooks, and cookbooks. Even though now most books are not thought of as a luxury product as they were in antiquity, their basic use remains the same. These truly book-like qualities were one of the greatest areas of interest to me."

Another student, after attending a Byzantine chant concert with the class, wrote,

> "The skill of those chanting, bringing the words to life through sound is unparalleled. And this exact observation made me realize just how much a religion can come to life through aesthetic accomplishments … There is a purpose for every wavering note that these individuals chanted, much like the fact that every stroke of the paintbrush by an iconographer is just as purposeful."

The quality of research, analysis, and writing in the final research projects was better in Rose's medieval art classes after she began teaching with these methods, and was very good in general (compared to the general survey course projects)—the quality showed evidence that students spent more time on the papers, which indicates that they were interested in the material, notable for a class mostly filled with students enrolled to fulfill a curriculum distribution requirement. More students also came to office hours to talk about their projects than she had ever experienced before. The average score on the final projects in two versions of the medieval art course increased by 3.7 points (out of 100) from the previous iteration of the course. Rubrics showed high scores in historical accuracy (used to measure foundational knowledge and research sources) and application of course material; over two-thirds of the class earned scores of A in those areas. To answer the question *What aspects of the course contributed most to your learning?* in Rose's course evaluations, most students cited the field trips and hands-on projects. One student wrote that the incorporation of hands-on activities "makes learning the material easier."

In Hedrick's classes, too, research papers increased dramatically in quality. By focusing on how an object or monument engaged the sensorium, students were able to establish and sustain an argument and make an original contribution to art history. Papers contained much more analysis and much less summary than is typical for that level (in fact, one undergraduate student's paper was so strong that she has presented it twice at conferences aimed at graduate students or faculty). Course readings and approaches also positively affected student study of art history generally. One graduate student—currently in the beginning stages of developing a dissertation on photography in the 1980s—found that the sensory approach had influenced her thinking about contemporary art. In particular, she noted that several readings "expanded [her] thinking about sight as more than vision," and encouraged her to analyze looking as a somatic experience rather than one that is primarily disembodied and analytical. Other evidence includes end-of-semester course evaluations which positively refer to the field trips and art projects (nine of eleven students in Rose's Byzantine seminar specifically mentioned the hands-on art projects as contributing positively to their learning). In Rose's medieval art course (the only one with pre- and post- intervention data), her scores for "excellent course" and "excellent professor" went up .6 points out of 4 for both categories from the previous time she taught it, although there were not controls for other possible factors.

As medievalists, we are pleased that we independently arrived at these pedagogical ideas at this moment in medieval art history scholarship. Our class activities and observations corroborate pedagogical research that shows that active and experiential learning works by affectively engaging students, and most importantly for us, learning about medieval art in a "sensorium" aligns with the

recent theoretical framework that is currently expanding our knowledge of medieval art's function and reception. It has been rewarding to see students' increased interest in, improved engagement with, and learning about the subject. The alternative would be truly dispiriting.

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